PERFORMANCE SPECIFICATION 3 - SPECIFICATIONS AND TEST PROCEDURES FOR O_2 AND CO_2 CONTINUOUS EMISSION MONITORING SYSTEMS IN STATIONARY SOURCES

1.0 Scope and Application.

    1.1 Analytes.

Analytes	CAS No.
Carbon Dioxide (CO_2)	124-38-9
Oxygen (O_2)	7782-44-7

    1.2 Applicability.

    1.2.1 This specification is for evaluating acceptability of O_2 and CO_2 continuous emission monitoring systems (CEMS) at the time of installation or soon after and whenever specified in an applicable subpart of the regulations. This specification applies to O_2 or CO_2 monitors that are not included under Performance Specification 2 (PS 2).

    1.2.2 This specification is not designed to evaluate the installed CEMS performance over an extended period of time, nor does it identify specific calibration techniques and other auxiliary procedures to assess the CEMS performance. The source owner or operator, is responsible to calibrate, maintain, and operate the CEMS properly. The Administrator may require, under Section 114 of the Act, the operator to conduct CEMS performance evaluations at other

times besides the initial test to evaluate the CEMS

performance. See 40 CFR part 60, Section 60.13(c).

1.2.3 The definitions, installation and measurement

location specifications, calculations and data analysis, and

references are the same as in PS 2, Sections 3, 8.1, 12, and

17, respectively, and also apply to O_2 and CO_2 CEMS under

this specification. The performance and equipment

specifications and the relative accuracy (RA) test

procedures for O_2 and CO_2 CEMS do not differ from those for

SO_2 and NO_x CEMS (see PS 2), except as noted below.

2.0 Summary of Performance Specification.

The RA and calibration drift (CD) tests are conducted

to determine conformance of the CEMS to the specification.

3.0 Definitions.

Same as in Section 3.0 of PS 2.

4.0 Interferences. [Reserved]

5.0 Safety.

This performance specification may involve hazardous

materials, operations, and equipment. This performance

specification may not address all of the safety problems

associated with its use. It is the responsibility of the

user to establish appropriate safety and health practices

and determine the applicable regulatory limitations prior to

performing this performance specification. The CEMS users

manual should be consulted for specific precautions to be taken with regard to the analytical procedures.

6.0 Equipment and Supplies.

Same as Section 6.0 of PS2.

7.0 Reagents and Standards.

Same as Section 7.0 of PS2.

8.0 Sample Collection, Preservation, Storage, and Transport.

8.1 Relative Accuracy Test Procedure. Sampling Strategy for reference method (RM) Tests, Correlation of RM and CEMS Data, and Number of RM Tests. Same as PS 2, Sections 8.4.3, 8.4.5, and 8.4.4, respectively.

8.2 Reference Method. Unless otherwise specified in an applicable subpart of the regulations, Method 3B or other approved alternative is the RM for O_2 or CO_2.

9.0 Quality Control. [Reserved].

10.0 Calibration and Standardization. [Reserved]

11.0 Analytical Procedure.

Sample collection and analyses are concurrent for this performance specification (see Section 8). Refer to the RM for specific analytical procedures.

12.0 Calculations and Data Analysis.

Summarize the results on a data sheet similar to that shown in Figure 2.2 of PS2. Calculate the arithmetic

difference between the RM and the CEMS output for each run. The average difference of the nine (or more) data sets constitute the RA.

13.0 Method Performance.

13.1 Calibration Drift Performance Specification. The CEMS calibration must not drift by more than 0.5 percent O_2 or CO_2 from the reference value of the gas, gas cell, or optical filter.

13.2 CEMS Relative Accuracy Performance Specification. The RA of the CEMS must be no greater than 1.0 percent O_2 or CO_2.

14.0 Pollution Prevention. [Reserved]

15.0 Waste Management. [Reserved]

16.0 References.

Same as in Section 17.0 of PS 2.

17.0 Tables, Diagrams, Flowcharts, and Validation Data. [Reserved]